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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,203	08/30/2001	Per Ligander	031941-092	8513

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EXAMINER

CHAMBLISS, ALONZO

ART UNIT PAPER NUMBER

2827

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/943,203

Applicant(s)

LIGANDER ET AL.

Examiner

Alonzo Chambliss

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 37-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 37-53 in Paper No. 3 is acknowledged. Claims 1-36 and 54-72 have been canceled.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 11/13/01 was filed before the mailing date of the non-final rejection on 5/27/04. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

4. The formal drawings filed on 8/31/01 have been approved by the examiner.

### ***Claim Objections***

5. Claim 37 is objected to because of the following informalities: the word " on " is misspelled on line 9. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 37 – 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. In claim 37, the phrase “ at least one layer of sequentially processed tracks ” is vague and indefinite since it is not clear from the claim if the layer of sequentially processed tracks are the same as the at least one layer of tracks in the preamble. Furthermore, if these layers are different then it is also not clear from the claim what the connective relationship is between the two track layers.
9. Claim 43 recites the limitation “ a support carrier ” in lines 2-4. There is insufficient antecedent basis for this limitation in the claim.
10. In claim 48, the phrase “ at least one sequentially processed layer having tracks arranged as at least one passive component ” is vague and indefinite since it is not clear how the layer creates a passive component.
11. In claim 49, the phrase “ at least one sequentially processed layer having tracks arranged as at least one active component ” is vague and indefinite since it is not clear how the layer creates an active component.

12. In claim 50-53, the phrase " at least one layer of sequentially processed tracks is applied to an interface layer " is vague and indefinite since it is not clear from the claims where the interface layer is located relative to the support carrier or interface carrier.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 37-40, 42-47, and 50-52, insofar as definite, are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Takahira et al. (EP 720123).

With respect to Claim 37, Takahira teaches applying at least one layer of sequentially processed tracks 3 on a first side of an interface carrier 1, wherein the second side of the interface carrier 1 being an interface side of the encapsulated circuit board arrangement. Joining a last applied sequentially processed layer (i.e. layer 3 that is not under the electronic parts) to a support carrier 2 with an adhesive layer 5, wherein the carrier 2 forming the protective cover on the second side of the encapsulated circuit board arrangement (see col. 5 lines 51-59 and col. 6 lines 1-30; Figs. 1 and 2).

With respect to Claims 38-40 and 42, Takahira teaches applying the adhesive layer 5 using offset printing technology on top of the last applied sequentially processed layer 3 and the support carrier 2 (see Fig. 1).

With respect to Claim 43-46, Takahira teaches wherein the step of joining the last applied sequentially processed layer 3 to the support carrier 2 (i.e. which is inherent that carrier has some level of rigidity but has bendability based on the composition of the PET material) comprises the step of joining the last applied sequentially processed layer 3 to a the support carrier which is at least a part of a cover housing or enclosure in which the encapsulated circuit board arrangement is mounted (see Fig. 1).

With respect to Claim 47, Takahira teaches wherein the step of applying at least one layer of sequentially processed tracks 3, 104a, 104b, 108, 109 comprises the step of applying at least on sequentially processed layer having connection circuitry (col. 10 lines 30-55 and col. 12 lines 25-37; Fig. 1).

With respect to Claims 50-52, Takahira teaches wherein the at least one layer of sequentially processed tracks is applied to an interface layer of the interface carrier 105, 106, 111 having at least one via 105a that is solid when filled with a conductive resin 107 (see Figs. 14-17). It is inherent that the interface layer 105, 106, 111 is bendable based on the composition of the PET material.

### ***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 41 and 53, insofar as definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahira et al. (EP 720123) as applied to claims 37 and 40 above, and further in view of Shimoda et al. (U.S. 6,645,830) and Barlow et al. (U.S. 4,225,408).

With respect to Claim 41, Takahira discloses wherein the step of applying at east one layer of sequentially processed tracks comprises the step of applying a adhesive 106 of at least one of the at least one sequentially processed layer. Takahira fails to explicitly disclose applying an acrylate as a dielectric adhesive as the at least one sequentially processed layer. However, Shimoda discloses utilizing an adhesive made of acrylate as a dielectric adhesive (see col. 14 lines 50-53). Thus, Takahira and Shimoda have substantially the same environment of an adhesive utilized to attach two structural elements together. Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate an acrylate dielectric adhesive with the

process Takahira, since the acrylate is reliable adhesive for connecting structural elements as taught by Shimoda.

With respect to Claim 53, it is well known in the semiconductor industry that PET can be substituted for a polyimide since both materials are thermoplastic materials as evident by Barlow et al. (see col. 3 lines 21-24).

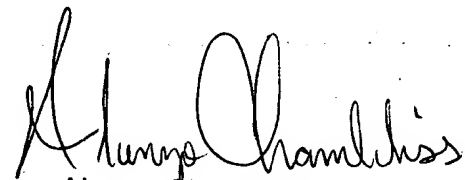
The prior art made of record and not relied upon is cited primarily to show the process of the instant invention.

### ***Conclusion***

17. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (703) 306-9143. The fax phone number for this Group is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956

AC/May 27, 2004

  
Alonzo Chambliss  
Primary Patent Examiner  
Art Unit 2827